

SAF-B00-004
Industrial Hygiene Sampling – Airborne
FINAL DATA

NO DISTRIBUTION REQUIRED

COMMENTS:

SDG 05I-3362-01 SAF-B00-004

Rad only ☒ Chem only Rad & Chem

☒ Complete Partial

300 Area 314 Bldg

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Cover Page

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Report Identification Number: 05I-3362-01
Subcontract Number: 0000X-BO-G0058-B-Mod#4
Name of Industrial Hygienist: Henry W. Ruby / Denise A. Pitts
Laboratory Identification Number: DCHM
SAF#: B00-004;B00-005 / R31400 1300
Payroll#: 72947

Sample Information

Sample Date	Customer Sample Number	Laboratory Sample Number	Method	Analytical Batch Identification	Sample Matrix
13 Aug 2005	J03TC6	05I31933	NMAM 7300M	G057H01Q	MCE
13 Aug 2005	J03TD2	05I31934	NMAM 7300M	G057H01Q	MCE
13 Aug 2005	J03TD3	05I31935	NMAM 7300M	G057H01Q	MCE

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Name: Lisa M. Reid
Title: Chemist
Date: August 17, 2005



Case Narrative Page

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General Set Information: There are five samples in set 05I-3360-01, five samples in set 05I-3361-01, three samples in set 05I-3362-01, five samples in set 05I-3363-01 and seven samples in set 05I-3364-01 for a total of 25 samples. The samples were analyzed for beryllium on MCE filter. No problems were encountered with the receipt of these samples and no contact with the CTR was required.

Method Summary: Samples were transferred to 50 ml centrifuge tubes and digested in the presence of 10 mL of 1:1 (v/v) nitric acid. Samples were digested in a hot block set at 110°C (with a thermometer reading of 96°C) for 40 minutes. Samples were then diluted to a 25 mL volume with ASTM Type II Water. Samples were shaken and delivered for ICP analysis.

Sample Preparation: All samples were prepared in accordance with DCL SOP "IH-AN-021" and NIOSH method NMAM 7300 modified for hot block digestion.

Holding Times: The holding times were met for both sample preparation and analysis.

Instrument Calibration: Instrument calibration was performed in accordance with NIOSH method NMAM 7300.

Initial and Continuing Calibration Verification Analysis: Beryllium recoveries in all Initial Calibration Verification (ICV) and Continuing Calibration Verification (CCV) samples are within the quality control limits of $\pm 10\%$.

Initial and Continuing Calibration Blank Analysis: No beryllium results were found in the Initial Calibration Blank (ICB) or Continuing Calibration Blanks (CCB) at levels above the Contract Required Detection Limits (CRDL) of 0.02 ug/sample.

Method Blank Analysis: No beryllium was found in the media blank sample above the Contract Required Detection Limit (CRDL).

Dilution(s): None of the samples were diluted.

Laboratory Control Sample and Duplicate Analysis: Two Laboratory Control Samples (LCSs) and two Laboratory Control Sample Duplicates (LCSDs) were prepared and analyzed with the sample batch.

The LCS results were within the control limit of $\pm 20\%$. The Relative Percent Differences (RPDs) between the LCSs and the LCSDs were within the control limit of 20%.

Replicate Analysis: Three samples in this batch were replicated. The RPDs between the samples and the replicates were within the control limit of 20%. If the result of the sample or replicate is below the CRDL, replicate analysis is negligible.

Flagging Codes:

U - Analyte not detected above the Method Detection Limit (MDL) of 0.004 ug/sample.

J - Analyte result is reported above the Method Detection Limit (MDL) of 0.004 ug/sample, but below the Contract Required Detection Limit (CRDL) of 0.02 ug/sample.

Nonconformance/Corrective Action Report (NC/CAR): N/A

Sample Calculation: The final results are calculated by the following equation:

$$\text{Final result for aqueous samples } (\mu\text{g/sample}) = (A) \times (B) \times (C)$$

Where:

A = Analyte concentration from instrument determination ($\mu\text{g/L}$)

B = Concentration factor from sample preparation

= $\frac{\text{Final Volume of Digestate (L)}}{\text{Sample}}$

C = Dilution performed at time of analysis

Example Calculation: $(1 \mu\text{g/L}) \times (0.025 \text{ L/sample}) \times (1) = 0.025 \mu\text{g/sample}$

Miscellaneous Comments: None.

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Customer Sample Number	Laboratory Sample Number	Date Analyzed	Beryllium $\mu\text{g}/\text{sample}$		Beryllium $\mu\text{g}/\text{m}^3$		Air Volume L	
J03TC6	05I31933	16 Aug 2005	<0.02	U	<0.009	U	422.	
J03TD2	05I31934	16 Aug 2005	<0.02	U	**		0.	
J03TD3	05I31935	16 Aug 2005	0.006	J	**		0.	
Limit of Detection (LOD)			0.004					
Required Detection Limit (RDL)			0.02					

U - Parameter not detected above LOD.

J - Parameter between LOD and RDL.

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Batch ID: G057H01Q

QC Sample ID	QC Type	Analyte	Units	Result	Parent Result	Target	Percent Rec.	Relative Percent Diff.
BL-235123-1	MB	Beryllium	µg/sample	ND	NA	NA	NA	NA
QC-235123-1	LCS	Beryllium	µg/sample	10.2	NA	10.0	102.	NA
QD-235123-1	LCSD	Beryllium	µg/sample	9.97	10.2	10.0	99.7	1.84
BL-235123-2	MB	Beryllium	µg/sample	ND	NA	NA	NA	NA
QC-235123-2	LCS	Beryllium	µg/sample	9.99	NA	10.0	99.9	NA
QD-235123-2	LCSD	Beryllium	µg/sample	10.1	9.99	10.0	101.	1.17

MB - Method Blank

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MSD - Matrix Spike Duplicate

LD - Laboratory Duplicate

NA - Not Applicable

ND - Parameter not detected above LOD

$LCS, LCSD \text{ Percent Rec.} = (\text{Result} / \text{Target}) * 100.0$

$MS, MSD \text{ Percent Rec.} = ((\text{Result} - \text{Parent}) / \text{Target}) * 100.0$

$LCS, LCSD \text{ Relative Percent Diff.} = (|LCS - LCSD| / ((LCS + LCSD)/2.0)) * 100.$

$MS, MSD \text{ Relative Percent Diff.} = (|MS - MSD| / ((MS + MSD)/2.0)) * 100.$

$LD \text{ Relative Percent Diff.} = (|Parent - LD| / ((Parent + LD)/2.0)) * 100$

051.3302.4

Bechtel Hanford, Inc.		ERC/INDUSTRIAL HYGIENE CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		
Collector: T. Wester	Company Contact Henry W. Ruby and Denise A. Pitts	Project Coordinator Joan H. Kessner	Data Turnaround 24 hr	
Payroll #: 72547	Sampling Location 300 ana 314 Bldg SE roof	SAF No. B00-004; B00-005	Method of Shipment Fed Ex	
Type of Sample: Be	Shipped To: DataChem Salt Lake City, UT	Bill of Lading/Air Bill No. 8525 3371 9756		
SPECIAL INSTRUCTIONS All relevant COAs must be provided: R314001300 ANALYSIS METHOD (SPECIFIC): NIOSH 7320-BE TWS 8/13/05				
POSSIBLE SAMPLE HAZARD/REMARKS Be/Oatobectus Special Handling and/or Storage None				
MATRIX A - AIR W - WIPE X - OTHER				
Preservation (e.g., cooling required, etc.)				
No No No Ashcan Lead B2 Airborne Airborne Airborne				
SAMPLE NO. MATRIX SAMPLE DATE VOLUME (L) Comments				
003124	a	8/13/05	422 na	TW 8/13/05 151.5/133 934 935
003122	a	8/13/05	na blank	
003123	a	8/13/05	na blank	
TW 8/13/05				

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